CLAIMS:

1. An optical record carrier recording apparatus for recording data by irradiating a radiation beam (5) onto a recording surface (2) of an optical record carrier (1) comprising:

a radiation source (4) for providing the radiation beam (5),

a phase locked loop (10) for providing a clock signal (clk),

a recording signal generation unit (9) for generating a recording signal (S1) from a received information signal (S) using said clock signal (clk),

a device (8) for generating a timing signal (S2) from said recording signal (S1), said timing signal (S2) having an increased timing resolution with respect to said recording signal (S1), and

a driver unit (7) for receiving said timing signal (S2) and driving said radiation source (4),

wherein said device (8) for generating said recording signal (S1) comprises:

delay means (11) for receiving said recording signal (S1) and for generating said timing signal (S2), said delay means comprising a first group (14) of delay cells (20) having a first delay and a second group (17) of delay cells (22) having a second delay, the difference between said first and said second delay forming a unit delay being smaller than said first and said second delay, and

selection means (12) for selecting the number of unit delays for delaying the recording signal (S1) by controlling the number of delay cells (20, 22) of said first and said second group (14, 17) to be passed by said recording signal (S1).

2. The apparatus as claimed in claim 1, further comprising delay control means (13) for controlling said first and said second delay of the delay cells (20, 22) of said first and said second group (14, 17).

3. The apparatus as claimed in claim 2, wherein said delay control means (13) are adapted for controlling the delay of the delay cells of the first group (14) to be T/x, T being the timing resolution of said recording signal (S1) and x being an integer number, and

for controlling the delay of the delay cells of the second group (17) to be T/(x-1) resulting in a unit delay of T/((x-1)x).

4. The apparatus as claimed in claim 1, wherein said first group (14) comprises x-2 delay cells (20) and said second group (17) comprises 2x-3 delay cells (22), x being an integer number and x(x-1) being the number of subdivisions to be made of the timing resolution of said recording signal.

5. The apparatus as claimed in claim 4, wherein said selection means (12) are adapted for controlling the number of delay cells (20, 22) of said first and said second group (14, 17) to be passed by said recording signal (S1) such that for a selected delay number N of unit delays D a second number Z_2 of delay cells of said second group (17) is selected to be N mod (x-1), and a first number Z_1 of delay cells of said first group (14) is selected to be int(N/(x-1))-Z_2+(x-2).

6. The apparatus as claimed in claim 1, wherein said selection means (12) comprise a first group (15) and a second group (18) of AND gates (21, 23), and a first and a second OR gate (16, 19), said first OR gate (16) being connected to the outputs of the AND gates (21) of said first group (15) and said second OR gate (19) being connected to the outputs of the AND gates (23) of said second group (18), the output of said first OR gate (16) being connected to the recording of the first AND gate (23) of said second group (18),

said AND gates (21, 23) being controlled for switching the recording signal (S1) to said first OR gate (16) after passing a first number Z_1 of delay cells (20) of said first group (14) and for switching the recording signal (S1) to said second OR gate (19) after passing a second number Z_2 of delay cells (22) of said second group (17).

7. The apparatus as claimed in claim 1, wherein said delay cells (20, 22) are non-inverting delay cells, each comprising two inverting current controlled or voltage controlled delay cell units.

8. The apparatus as claimed in claim 2, wherein said delay control means (13) comprise two phase locked loop circuits (131, 132), each phase locked loop circuit comprising a current controlled oscillator (32, 42) for generating a first and second control

signal (C1, C2) for controlling the delay of the delay cells (20, 22) of said first and second group (14, 17) and a clock divider (33, 43) for dividing the frequency of the output signal (F) of said current controlled oscillator (32, 42).

9. The apparatus as claimed in claim 8, wherein said current controlled oscillators (32, 42) each comprise a number of interconnected inverting delay cells (50) forming a ring oscillator, wherein the delay of said delay cells of a first ring oscillator (32) is selected to be p times said first delay and the delay of said delay cells of the second ring oscillator (42) is selected to be p times said second delay, p being a number greater than zero.

10. An optical record carrier recording method for recording data by irradiating a radiation beam (5) onto a recording surface (2) of an optical record carrier (1) comprising the steps of:

generating the radiation beam (5) by a radiation source (4),

generating a clock signal (clk) by a phase locked loop (10),

generating a recording signal (S1) by a recording signal generation unit (9) from a received information signal (S) using said clock signal (clk),

generating a timing signal (S2) from said recording signal (S1), said timing signal (S2) having an increased timing resolution with respect to said recording signal (S1), and

receiving said timing signal (S2) and driving said radiation source (4) by a driver unit (7),

wherein said recording signal (S1) is received by delay means (11) for generating said timing signal (S2), said delay means (11) comprising a first group (14) of delay cells (20) having a first delay and a second group (17) of delay cells (22) having a second delay, the difference between said first and said second delay forming a unit delay being smaller than said first and said second delay, and

wherein the number of unit delays for delaying the recording signal (S1) is selected by selection means (12) by controlling the number of delay cells (20, 22) of said first and said second group (14, 17) to be passed by said recording signal (S1).